



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,918	01/29/2002	Yuan-Cheng Chin	CHIN3014/EM	3719

23364 7590 10/07/2003

BACON & THOMAS, PLLC  
625 SLATERS LANE  
FOURTH FLOOR  
ALEXANDRIA, VA 22314

EXAMINER

ANYASO, UCHENDU O

ART UNIT	PAPER NUMBER
----------	--------------

2675

2

DATE MAILED: 10/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/057,918

Applicant(s)

CHIN, YUAN-CHENG

Examiner

Uchendu O Anyaso

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. **Claims 1-19** are pending in this action.

***Claim Rejections - 35 USC ' 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Davis et al* (U.S. Patent Appl. 2003/0034959) in view of *Kwang-Chien* (U.S. 5,517,211).

Regarding **claim 1, 10 and 19**, Davis teaches an optical mouse 10 (page 2, para 0016) comprising a housing in the form of a plastic case 12 with a top cover (figure 1 at 12, page 2, para 0015).

Furthermore, Davis teaches a light emitting diode mounted inside the optical mouse 10 to electrically connect with the lead by teaching a circuit board in the form PCB 36 that is securely mounted inside the housing/case and having a light emitting diode (LED) 34 and a sensor chip 16 (page 2, para 0016-0018, figure 2 at 16, 34, 36A) wherein this sensor chip has a lead (see sensor chip 16).

However, Davis does not teach how the light emitting diode would be reflected by a table surface. On the other hand, Kwang-Chien teaches a dual beam detector for an optical mouse

Art Unit: 2675

comprising work pad 6, LEDs (21, 22) and lens assembly 3 wherein light emitted from LEDs (21, 22) are reflected by the work pad 6 (column 2, lines 44-62).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Davis and Kwang-Chien's inventions because while Davis teaches a configuration of an optical mouse comprising a circuit board in the form PCB 36 that is securely mounted inside the housing and having a light emitting diode (LED) 34 and a sensor chip 16 wherein the optical sensor 16 is positioned over a hole 36A of the PCB 36 (page 2, para 0016-0018, figure 2 at 16, 34, 36A), Kwang-Chien teaches how light emitted from LEDs (21, 22) of an optical mouse would be reflected by a work pad 6 (column 2, lines 44-62). The motivation for combining these inventions would have been to ensure a more accurate tracking indicative of direction and amount of movement of the optical mouse (column 3, lines 17-19).

Regarding **claims 2 and 11**, in further discussion of claims 1 and 10, Davis teaches a circuit board in the form PCB 36 that has a hole 36A defined to correspond to the through hole in the base plate 40 and the lens assembly 38 is located in the hole (*see* figure 2 at 36, 36A, 38, 40).

Regarding **claims 3 and 12**, in further discussion of claims 2 and 11, Davis teaches how the light emitting diode 34 is mounted on top of the PCB 36, and the PCB 36 has an opening 36A corresponding to the reflection path of the light emitting diode (figure 2 at 34, 36, 36A).

Art Unit: 2675

Regarding **claims 4 and 13**, in further discussion of claims 4 and 10, Davis teaches how lens assembly has a securing portion so as to be secured in the hole of the PCB 36 (page 2, para 0021).

Regarding **claims 5, 6 and 15**, in further discussion of claim 4 and 10, Kwang-Chien teaches how light emitted from LEDs (21, 22) (figure 3 at 2),

Regarding **claims 7, 9 and 18**, in further discussion of claim 2 and 11, Davis teaches how the LED 34, sensor 16, and PCB 36 are chip on board (figure 2 at 16, 34, 36).

Regarding **claims 8 and 17**, in further discussion of claim 1 and 10, Davis teaches the body of the device is attached to the PCB 36 through hole 36A (figure 2 at 36A, 16).

Regarding **claim 14**, in further discussion of claim 13, Davis teaches lens assembly 38 (figure 2 at 38).

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 6,462,330 to *Venkat et al* for a cover with integrated lens for integrated chip optical sensor.

U.S. Patent 6,421,045 to *Venkat et al* for a snap-on lens carrier assembly for integrated chip optical sensor.

Art Unit: 2675

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uchendu O. Anyaso whose telephone number is (703) 306-5934. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras, can be reached at (703) 305-9720.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

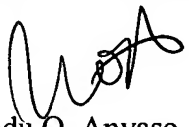
Washington, D.C. 20231

**or faxed to:**


**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

  
Uchendu O. Anyaso

09/30/2003

  
STEVEN SARAS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600